

REMARKS

Claims 1-52, 56-72, and 76-81 remain pending in this application. Claims 76 and 78 have been amended. The allowance of claims 16-23, 34-40, 56-67 and 77, and the indication that claims 42 and 81 are directed to allowable subject matter, are acknowledged with appreciation. No new matter has been added. Further reconsideration of this application is requested.

35 U.S.C. § 112 Rejection

Reconsideration and withdrawal of the rejection of claim 76 under 35 U.S.C. § 112, second paragraph is requested. The Office action takes the position that claim 76 does not "particularly point out and distinctly claim the subject matter which applicant regards as the invention." In particular, the Office action states that it is unclear "how the result of 'automating a sequence of process flow operations' is a result created from 3 sets of tables simply containing data."

Claim 76 is directed to a computer readable medium containing a computer readable data structure, which constitutes a legitimate article of manufacture under the patent laws. The claimed computer-readable data structure clearly and distinctly sets forth the specific computer-readable data contained therein, and as such claim 76 is clear and definite on its face as to the data structure claimed. In other words, those skilled in the art are able to determine whether or not a computer-readable data structure infringes claim 76 without any ambiguity. Consequently, claim 76 is in full compliance with the requirements of 35 U.S.C. 112 and is not indefinite as alleged.

The data structure contained by the claimed computer readable medium includes computer readable data that enables automation of a sequence of process flow operations, as is fully disclosed in and enabled by the specification. It is not the purpose of a claim to "explain" how a result is obtained. Instead, claims need only reasonably apprise those skilled in the art as to their scope and be as precise as the subject matter permits. Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986); see also In re Warner, 33 F.3d 1354, 31 USPQ2d 1754 (Fed. Cir. 1994) (legal standard for definiteness is whether claim reasonably apprises those of skill in the art of its scope). How the result of "automating a sequence

of process flow operations" is obtained by use of the claimed computer-readable data structure is instead fully set forth in the written description of the invention. A computer readable medium that is used in such process flow sequence automation is all that is claimed in claim 76.

The computer readable medium as set forth in claim 76 is not merely a collection of data as asserted in the Office action, but to the contrary sets forth specific recipe and unit operation data, and specific recipe and unit operation live data including operation status and start and finish time information, all of which relates to the recited automation of process flow operations. As such, claim 76 is directed to a statutory article of manufacture under 35 U.S.C. § 101. Further, claim 76 clearly and distinctly sets forth the elements of the computer-readable data structure of the computer-readable medium, and therefore fully complies with the second paragraph of 35 U.S.C. § 112. Claim 76 does not have to explain how a computer would use the claimed data structure to automate sequencing of process flow operations as alleged in the Office action. The enablement of the automation instead is provided in the written description portion of the application. Consequently, reconsideration and withdrawal of this ground of rejection is requested.

35 U.S.C. § 102 Rejection

The rejection of claims 24, 25, 28, 31, 32, 41, 43-49, 52, 68, 71, 78 and 80 as being anticipated by U.S. Patent No. 5,499,188 to Kline Jr. et al. ("Kline") is respectfully traversed.

The Office action states that claims 24 and 68 do not require "a classification of sequential," (*sic*) but rather "deal solely with parallel execution aspects." However, both claims relate to the execution of a plurality of unit operations included in a recipe, wherein each unit operation is classified as either a sequential operation or a parallel operation, wherein a group of parallel classified operations is executed in parallel, and execution of additional sequential classified operations is postponed until the completion of execution of the group of parallel operations. In particular, claims 24 and 68 each require a determination of whether a next one of a plurality of unit operations is executable in parallel with execution of another one of the plurality of unit operations. If

so, the next unit operation is executed in parallel, and if not, execution of the next unit operation is postponed (i.e., "sequential") until completion of execution of the other unit operation. This is disclosed in Fig. 7 at steps 712-720 and described at paragraphs 0050 - 0053 of the specification.

As previously stated, contrary to the claimed invention, Kline is directed to the building of a recipe for the production of a product. Kline discloses the building of a formula based on a product to be produced, where the formula provides information relating to the quantities of raw materials used and the manner of combining the raw materials, where the formula is independent of equipment. The recipe is then built based on the formula and a selected production line (i.e. equipment), with the recipe being a set of procedures unique to the selected production line and executed in a specified sequence.

Thus, Kline fails to disclose (1) the classification of a unit operation subsequent to a unit operation being executed, as either sequential or parallel, (2) executing parallel unit operations in parallel, or (3) postponing execution of further sequential operations until completion of execution of parallel operations. Kline at columns 10, 11 and 12 relied on in the Office action as allegedly anticipating the claim limitations, in fact discloses formula and recipe build operations, not execution of unit process flow operations as contained in a recipe as set forth in claims 24 and 68 and the claims dependent thereon. For this reason, Kline fails to anticipate claims 24 and 68 and their dependent claims and the rejection should be withdrawn on this basis.

Additionally, however, Kline nowhere discloses the classification of unit operations as parallel or sequential as alleged in the Office action. In particular, Kline discloses at columns 11 and 12 that the logic employed in the recipe builder views the recipe as a sequential series of operations even though the final result may be a set of recipes which can be executed in parallel. See col. 11, lines 52-55. The result of determination that a "start" step should be made conditional is not parallel execution as alleged in the Office action, but instead requires a corresponding INITIATE step to be added to a vessel to which the start step dumps. See col. 12, lines 15-19. No parallel execution of any steps with postponement of execution of a sequential step until

completion of the parallel steps is disclosed. Instead, all of the steps are sorted by the vessel in which they are located. Col. 12, lines 31-34.

The Office action further maintains the rejection of claims 41 and 52, asserting that "Kline teaches a workstation, input/output components, and process hardware ... all of these devices are ... able to communicate with each other" and that that Applicant did not expand on the fact that Kline fails to disclose a hardware control program monitoring and controlling process hardware based on execution of unit operations of a recipe by a separate process control program.

Claims 41 and 52 set forth a controller requiring a processing component executing a process control program and a hardware control program, where the process control program executes a recipe of a plurality of unit operations that the process control program receives through an input/output component of the controller, the hardware control program monitors and controls process hardware through the input/output component, and the input/output component communicates with a workstation and with the process hardware. Kline fails to disclose any such controller.

As explained, the controllers 30 and 40 of Kline communicate with field devices through input/output modules 21A-21D, and communicate with a workstation 122 through a separate universal control network 14 and network interface module 602 (Fig. 1). Thus, Kline indeed fails to disclose communication between a controller and workstations and process hardware through the same input/output component as required by claims 41 and 52.

The Office action further relies on Kline col. 8 lines 49-67 as allegedly disclosing the claimed hardware control program and process control program. However, the cited section merely discloses that a "recipe is down loaded to a predetermined controller which then executes the control of the field devices of the production line..." As previously explained, the controller executing the recipe does not correspond to the required separate process control program and hardware control program as claimed. In view of the foregoing, the rejection of claims 41 and 52 and their dependent claims should be withdrawn.

Finally, the Office action maintains the rejection of independent claim 78. The Examiner states that "there is no specific requirement requiring a 'preexisting recipe' as

argued.” However, claim 78 is directed toward “editing a recipe,” wherein a user is able to edit the recipe by reviewing lists of available and selected unit operations and resources, by being able to add or delete at least one available unit operation to or from the recipe, and edit the resources for at least one of the selected unit operations. There must be a preexisting recipe in order for the user to be able to edit it. If there was no preexisting recipe, the user would merely be able to create a recipe, not edit it. Notwithstanding the foregoing facts, claim 78 has been amended to explicitly recite a pre-existing recipe.

Furthermore, the passage cited by the Office action does not disclose all of the elements of claim 78. Col. 10 lines 49-67 relied on by the Office action merely states that if an old formula is to be reviewed or modified it is called from its stored location, the operator selects a desired operation, and default information is inserted into the record. See Fig. 9, steps 304-310.

Claim 78, on the other hand, requires presenting the user a list of available unit operations, a list of selected unit operations defining the recipe, and a list of resources based on the selected unit operations. Furthermore, Claim 78 requires that the computer system specifically allow the user to add or delete at least one of the available unit operations to or from the recipe and allowing the user to edit the resources for one of the selected unit operations.

Since a claim is only anticipated if each and every element is disclosed in the cited document, Kline does not anticipate Claim 78 since it does not disclose all of the limitations required by the claim. There is no reference to selecting from multiple lists nor is there reference to ways to edit the recipe as specifically disclosed in Claim 78. Therefore, the rejection of Claim 78 should be withdrawn.

35 U.S.C. § 103 Rejections

The examiner maintains the rejection of claim 1 and its dependent claims in apparent disagreement with Applicant’s statement that the Safir reference is not concerned with the production of radiopharmaceuticals, on the purported basis that “radiopharmaceuticals were noted as a well known type of chemical mixture.” As previously explained however, Claim 1 is directed to apparatus for specifically


automating the production of a radiopharmaceutical, comprising a workstation and controller similar to the controller as set forth in claim 41 as discussed above. Both Kline and Safir fail to disclose any such controller as explained above. Regardless of whether Safir teaches radiopharmaceuticals or not (which Applicant maintains Safir fails to disclose or suggest), neither document discloses the claimed controller, and therefore no combination of Kline and Safir could result in the apparatus of claim 1. Withdrawal of this ground of rejection is requested. For this reason, Claim 1 and its dependents, namely, claims 2-15 are submitted to be patentable over any combination of Kline with Safir. The Office action rejects claim 27 on the same basis as claim 1; however claim 27 depends from independent claim 24 and not from claim 1. The Office action has failed to show how claim 27 is rendered unpatentable by any combination of Safir with Kline as explained above and with respect to the rejection of claim 24 as being anticipated by Kline.

Further, Funk et al. fails to cure any of the deficiencies of Kline and Safir with respect to claim 1, or the deficiency of Kline with respect to claims 24 and 41; thus claims 5, 8, 15, 26, 29, 33, 50, 51, 70, 72, 76 and 79 cannot be rendered obvious by any addition of Funk to the proposed combination of prior art references. Finally, Christian et al. also fails to disclose the features missing from Kline and Safir with respect to claim 1; thus claims 9, 10, 30 and 69 cannot be rendered obvious by any combination of Christian et al. with these references.

Conclusion

Favorable reconsideration of this application and the issuance of a Notice of Allowance is earnestly solicited in view of the above amendments and remarks.

Please charge any fee or credit any overpayment pursuant to 37 CFR 1.16 or 1.17 to Novak Druce Deposit Account No. 14-1437.

RESPECTFULLY SUBMITTED,					
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